APRIL 2001

[KD 303]

M.Pharmacy DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch V — Pharmaceutical Analysis

Paper III — ADVANCED PHARMACEUTICAL ANALYSIS

Time : Three hours Maximum : 100 marks

Answer ALL the questions.

All questions carry equal marks.

1. Give a comparative account on the various methods for the assay of the following including the pharmacopoeial method :

(a) Streptomycin and its formulation

(b) Thiamin and Thiamin tablet

(c) Folic acid and folic acid tablet

(d) Cotrimoxazole tablet. (7 + 6 + 6 + 6)

2. (a) Explain the quality control tests of the following as per the pharmacopoeia of India :

(i) Capsules

(ii) Liquid orals.

(b) Give a detailed account on the validation of the analytical method as per the ICH guidelines. (13 + 12)

3. (a) Explain the LAL test. What are its advantages and disadvantages over the other methods of sterility testing.

(b) Explain the determination of fibre length and its applications.

(c) What do you mean by test of significance? Mention its importance in the interpretation of analytical data. Explain any two tests of significance.

(d) Explain the use of the folin ciocalteu reagent as an analytical tool. (7 + 5 + 10 + 3)

4. (a) Explain the Microbiological assay of cyanocobalamine.

(b) What is the general principle involved in the determination of potency of antisera. Explain with an example.

(c) Explain about the ELISA test.

(d) How will you determine the potency of pepsin. (8 + 8 + 4 + 5)

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[KE 303] **NOVEMBER 2001**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First year

Branch V — Pharmaceutical Analysis

Paper III — ADVANCED PHARMACEUTICAL ANALYSIS

Time : Three hours Maximum : 100 marks

Answer ALL questions.

All questions carry equal marks.

1. Give the principle and technique involved in the Indian pharmacopoeial assay of the following :

(a) Phenobarbitone tablets and Phenobarbitone Sodium Injection. (7)

(b) Vitamins A and D capsules (combined) (11)

(c) Ampicillin capsules. (4)

(d) Testosterone propionate Injection. (3)

2. Write notes on the following :

(a) Quality control of parenteral preparations. (8)

(b) Quality control of crude drugs. (9)

(c) Calibration of analytical instruments. (8)

3. (a) Write about the statistical treatment of Analytical data. (10)

(b) Explain the ELISA test. (7)

(c) Write about the principle involved in the use of

(i) Folinciocalteu reagent

(ii) Ninhydrin reagents in drug analysis. (8)

4. (a) Write about the biological assay of plague vaccine. (10)

(b) Explain the assay of papain. (5)

(c) Give an account of various methods available for the determination of sulphonamide drugs. (10)

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SEPTEMBER 2002

[KH 303]

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch V — Pharmaceutical Analysis

Paper III — ADVANCED PHARMACEUTICAL ANALYSIS

Time : Three hours Maximum : 100 marks

Answer ALL the questions.

All questions carry equal marks.

1. Give the principles and techniques involved in the analysis of the following including the pharmacopoeial method :

(a) Penicillin and its formulations.

(b) Ascorbic acid and its tablets.

(c) Phenobarbitone and its tablets.

(d) Betamethasone and Dexamethasone and its formulations. (7 + 6 + 6 +6)

2. (a) Explain the quality control test for the following as per I.P.

(i) Emulsions and suspensions

(ii) Parenterals.

(b) Write a note on quantitative determination of drugs in blood with special emphasis on drug monitoring and bioequivalence studies. (12 + 13)

3. (a) Explain the microbiological assay of Folic acid.

(b) Write a note on powder analysis.

(c) Explain with example the principle involved in the determination of potency of vaccines.

(d) How would you determine the potency of pepsin? (6 + 6 + 6 + 7)

4. (a) Outline the use of the following reagents in pharmaceutical analysis :

(i) 3–methyl–1, 2 benzothiazoline (MBTH)

(ii) p–dimethylaminocinnamaldehyde (PDAC)

(b) Define Reference standard, give its source. How will you convert your laboratory standard to a reference standard?

(c) Write a brief note on student t–test and explain how it can be used in pharmaceutical analysis. Give examples.

(d) Briefly explain immunofluorescence and immunoaffinity. (8 + 5 + 6 + 6)

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[KI 303] APRIL 2003 Sub. Code : 1023

M.Pharm. DEGREE EXAMINATION

(Revised Regulations)

First Year

Branch V — Pharmaceutical Analysis

Paper III — ADVANCED PHARMACEUTICAL ANALYSIS

Time : Three hours Maximum : 100 marks

Answer ALL the questions.

All questions carry equal marks.

1. Explain the principle and procedure involved in the analysis of the following including official methods.

(a) Sulfa drugs (6)

(b) Vitamin B complex (6)

(c) Phenobarbitone sodium (6)

(d) Oestrogens. (7)

2. (a) How do you carry out quality control tests of the following pharmaceutical formulations as per the Indian Pharmacopoeia : (12)

(i) Tablets

(ii) Capsules.

(b) Explain in detail, the procedure involved for the quantitative estimation of drugs in urine, outlining the special emphasis on therapeutic drug monitoring and Bio equivalence studies. (13)

3. (a) Write a note on the microbiological assay of penicillin. (8)

(b) Significance of Ash values and fibre content. (8)

(c) How do you determine potency of toxins and toxoids? (9)

4. (a) Discuss the significance of following reagents in Pharm. Analysis. (7)

(i) p-dimethylamino benzaldehyde

(ii) 1,2–napthoquinone–4–sulfonate

(b) What is a Reference standard? Explain the different parameters to consider a substance, a reference standard. (6)

(c) Write a note on validation of analytical procedures. (6)

(d) Significance of immunological assays. (6)

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OCTOBER 2003

[KJ 303] **Sub. Code : 1023**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch V — Pharmaceutical Analysis

Paper III — ADVANCED PHARMACEUTICAL ANALYSIS

Time : Three hours Maximum : 100 marks

Answer ALL the questions.

All questions carry equal marks.

1. Discuss the principle and procedure involved in the analysis of the following including official methods :

(a) Cephalosporins and its formulation

(b) Progesterone and its formulation

(c) Vitamin B2 and its tablets

(d) Chloramphenicol. (25)

2. (a) Discuss the procedure involved in the quality control tests of the following as per the Indian Pharmacopoeia

(i) Ointments

(ii) Large volume parenterals. (12)

(b) Write a detailed note on the different parameters involved in the quality control tests of crude drugs. (13)

3. (a) Write a detailed note on the principle, procedure, and significance of immunological assays.(13)

(b) How do you carry out the assay of Papain and Hyaluronidase? (12)

4. (a) Explain the biological significance of drugs developed from genetic engineering. (6)

(b) How do you validate the analytical procedures as per the ICH guidelines? (6)

(c) Significance of t–test, f–test and analysis of variance. (6)

(d) Significance of MBTH in pharmaceutical analysis. (7)

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APRIL 2004

[KK 303] Sub. Code : 1023

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch V — Pharmaceutical Analysis

Paper III — ADVANCED PHARMACEUTICAL ANALYSIS

Time : Three hours Maximum : 100 marks

Sec. A & B : Two hours and forty minutes Sec. A & B : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

SECTION A

Answer ALL : (2 × 15 = 30)

1. (a) Discuss the Iodometric method and mercurimetric titration of penicillins.

(b) Write about a titrimetric and a colorimetric method of analysis of sulpha drugs based on the determination of their primary aromatic amine group.

2. (a) Discuss the validation of analytical procedures.

(b) Write on the quality control of crude drugs.

SECTION B

(10 × 5 = 50)

3. Write about the different methods of analysis of vitamin C.

4. Discuss the analysis of pepsin.

5. Write briefly on Bioequivalence studies and Therapeutic Drug monitoring.

6. Discuss the Microbiological assay of vitamins.

7. Explain LAL test.

8. Write about the determination of Ash values and their significance.

9. Discuss the importance of *t*-test and *F*-test.

10. Write about the calibration of Analytical Instruments.

11. Write briefly on the analysis of vaccines by taking a suitable example.

12. Write briefly on the different methods of analysis of barbiturates.

AUGUST 2004

[KL 303] **Sub. Code : 1023**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch V — Pharmaceutical Analysis

Paper III — ADVANCED PHARMACEUTICAL ANALYSIS

Time : Three hours — Maximum : 100 marks

Sec. A & B : Two hours and forty minutes — Sec. A & B : 80 marks

M.C.Q. : Twenty minutes — M.C.Q. : 20 marks

Answer ALL questions.

SECTION A — (2 × 15 = 30 marks)

1. Write the principle and technique involved in the Indian pharmacopocial assay of the following :

(a) Oestradiol benzoate Injection and Norethisterone tablets. (8)

(b) Vitamin A concentrate (Oily form). (7)

2. Discuss the different immunological assay methods. (15)

SECTION B — (10 × 5 = 50 marks)

Write short notes on the following :

3. Quality control of capsules.

4. Determination of Ash values and Extractive values of vegetable drugs and their importance.

5. Analyses of drugs in Biological fluids and its applications.

6. Write the principle and procedure involved in using PDAB reagents in drug analyses.

7. Discuss the application of *t*-test, *F*-test and chi-square test in drug analyses.

8. Explain the assay on Hyaluronidase.

9. Write notes on the analysis of poliomyelitis vaccine, live (oral).

10. How do you validate the analytical procedures as per the ICH guidelines?

Discuss the significance of following reagents in Pharm. Analysis :

11. p-dimethylamino benzaldehyde. (5)

12. 1, 2-napthaoquinone-4-sulfonate. (5)

FEBRUARY 2005

[KM 303] Sub. Code : 1023

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch V — Pharmaceutical Analysis

Paper III — ADVANCED PHARMACEUTICAL ANALYSIS

Time : Three hours Maximum : 100 marks

Sec. A & B : Two hours and forty minutes Sec. A & B : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

SECTION A — (2 × 15 = 30 marks)

1. Give a comparative account on various assay methods for the followings

(a) Barbiturates

(b) Sulphadrugs.

2. Elaborate the validation parameters as per ICH guidelines for analytical methods.

SECTION B — (10 × 5 = 50 marks)

3. Explain the principle involved in any two assay methods for thiamine.

4. Write notes on general quality control test for tablets.

5. Give a brief account on LAL test.

6. How will you determine ash value? Mention its significance.

7. Explain the use of "Cycopodium" in quantitative microscopy.

8. Explain ELISA and its use.

9. How will you assay pepsin?

10. How will you calibrate spectrophotometer?

11. What is t-test? How it is performed? Mention its use.

12. Explain the use of the following reagents in analysis

(a) P-dimethylamino benzaldehyde

(b) Folin-ciocaltem reagent.

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AUGUST 2005

[KN 303] Sub. Code : 1023

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch V — Pharmaceutical Analysis

Paper III — ADVANCED PHARMACEUTICAL ANALYSIS

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q : Twenty minutes M.C.Q : 20 marks

Answer ALL questions.

I. Long Essay : (2 × 15 = 30)

1. Explain in detail the process validation.

2. Explain the quality control tests to be performed for parenterals.

II. Short Notes : (10 × 5 = 50)

1. Explain the principle and procedure involved in using FC reagent in drug analyses.

2. Add a brief note on the applications of t-test, f-test and chi-square test in drug analyses.

3. Explain the principle and technique involved in the analysis of riboflavine.

4. Discuss briefly the quality control tests to be performed for conventional compressed tablets.

5. Explain the enzyme analysis of Papain.

6. Write a note on the analysis of DNA recombinant Hepatitis B vaccine.

7. Explain the procedure for finding out drug concentration in blood.

8. Explain the microbiological assay of Ampicillin.

9. Explain the principle and procedure involved in ELISA test.

10. Give the importance of Ash value, Extraction value, fibre content in the quality control of crude drugs.

MARCH 2006

[KO 303] Sub. Code : 1023

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch V — Pharmaceutical Analysis

Paper III — ADVANCED PHARMACEUTICAL ANALYSIS

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

I. Long Essay ; (2 × 15 = 30)

1. Elaborate the usefulness of various parameters in the quality control of crude drugs.

2. Write the principle and technique involved in the assay (I.P) of the following :

(a) Riboflavine

(b) Amoxycilline trihydrate capsules.

II. Short notes on : (10 × 5 = 50)

1. How do you calibrate spectrophotometer?

2. Discuss the validation of analytical procedures as per ICH guidelines.

3. Explain the principle and procedure involved in using MBTH reagent in drug analyses.

4. Add a detail note on the assay of papain.

5. How do you analyse the Hepatitis B vaccine?

6. Discuss briefly the general methods of quality control for tablets.

7. Discuss the application of standard deviation, precision and accuracy.

8. Explain the principle involved in any two assay methods for ascorbic acid.

9. Add a note on therapeutic drug monitoring.

10. Explain the principle and procedure involved in immunoblotting technique.

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SEPTEMBER 2006

[KP 303] **Sub. Code : 2827**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch V — Pharmaceutical Analysis

Paper III — ADVANCED PHARMACEUTICAL ANALYSIS

Time : Three hours | Maximum : 100 marks

Theory : Two hours and forty minutes | Theory : 80 marks

M.C.Q. : Twenty minutes | M.C.Q. : 20 marks

Answer ALL questions.

I. Long Essay :

1. (a) Quality control tests for Tetanus Toxoid. (10)

(b) Analytical applications of p-dimethylamino cinnamaldehyde. (10)

2. Give an account on validation of analytical method as per ICH guidelines. (15)

3. Explain the official and other common quality control tests for

(a) Tablets

(b) Small volume parenterals. (15)

II. Write short notes on the following : (6 × 5 = 30)

1. Any two sample preparation techniques for the determination of drugs in biological fluids.

2. Determination of crude fibre content and its use.

3. Technique and application of ELISA.

4. Assay of Pepsin.

5. Analytical application of MBTH.

6. Analysis of variance and its significance in pharmaceutical research.

MARCH 2007

[KQ 329] Sub. Code : 2865

M. Pharm. DEGREE EXAMINATION.

(Regulations 2006)

First Year

Branch V — Pharmaceutical Analysis

Paper III — ADVANCED PHARMACEUTICAL ANALYSIS

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

I. Long Essay :

(1) (a) Explain briefly the principles involved in different physico-chemical methods of analysis available for sulphonamides. (10)

(b) Analytical applications of 2, 4-dinitro phenyl hydrazine. (10)

(2) Explain the concept of analytical method development taking uv and visible spectroscopy as an reference. (15)

(3) Explain the principles and procedures involved in quantitative determination of

(a) Hydroxyl

(b) Aldehydes

(c) Ester

(d) Amines. (15)

II. Short notes : (6 × 5 = 30)

(1) Write the analytical applications of 2, 3, 5-Triphenyl tetrazolium salt

(2) Write the principle involved in ELISA test

(3) Explain the concept ANOVA (analysis of variance) and its applications in quality assurance practice of pharmaceuticals.

(4) Validation and calibration of HPLC.

(5) Microbiological assay of rabies vaccine.

(6) Explain the concept of x-ray powder diffraction technique.

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SEPTEMBER 2007

[KR 303] **Sub. Code : 2828**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch V — Pharmaceutical Analysis

Paper III — ADVANCED PHARMACEUTICAL ANALYSIS

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions

I. Essay :

1. Explain the quality control tests to be performed for parenterals. (20)

2. (a) Explain the principles and methods involved for determination of barbiturates in pharmaceutical analysis.

(b) Give a report on analysis of xanthyl derivatives of barbiturates. (15)

3. (a) Illustrate the principles and techniques of immunoassay.

(b) What is immunoblotting and explain ELISA technique. (15)

II. Short notes on : (6 × 5 = 30)

1. Discuss quality control of parenterals.

2. Dermination of Ash values and extractive values of crude drugs.

3. What are vaccines and toxoids. Explain the analysis of diphtheria vaccine.

4. Give the significance of following reagents in pharmaceutical analysis.

(a) Felin – Ciocalteau reagent.

(b) 1, 2 – naphthoquinone – 4 – sulfonate.

5. Explain Chi-square test and F-test.

6. Give a report of bioequivalence studies.

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SEPTEMBER 2007

[KR 329] **Sub. Code : 2865**

M.Pharm. DEGREE EXAMINATION.

First Year

(Regulations 2006)

Branch V — Pharmaceutical Analysis

Paper III — ADVANCED PHARMACEUTICAL ANALYSIS

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

I. Long Essay :

1. (a) Write the principles and procedures involved in analysis of following ___

(i) Streptomycin

(ii) Digoxin.

(b) Write short notes on the following ___

(i) Assay of Rabies vaccine

(ii) Assay of Tetanus Antitoxin. (10 + 10)

2. (a) How is UV - Visible Spectrophotometer calibrated?

(b) Write a note on elemental analysis of calcium and bromine. (7 + 8)

3. (a) Write the principle and procedure involved in the use of PDAB reagent in pharmaceutical analysis.

(b) Write the principle and equations for assay methods of Vitamin C. (8 + 7)

II. Short notes : (6 × 5 = 30)

1. Write the procedure involved in quantitative determinations of Amine groups.

2. Explain the applications of MBTH in quantitative analysis of drugs.

3. Write a note on particle size analysis.

4. Write the principles and equations involved in fluorimetric estimation of Thiamine.

5. Describe tests for determining the effectiveness of Antimicrobial preservatives.

6. Write analytical methods for determination of Rauwolfia alkaloids.

September 2008

[KT 329] **Sub. Code : 2865**

M.Pharm. DEGREE EXAMINATION.

First Year

(Regulations 2006)

Branch V — Pharmaceutical Analysis

Paper III — ADVANCED PHARMACEUTICAL ANALYSIS

Q.P. Code : 262865

Time : Three hours Maximum : 100 marks

Answer ALL questions.

I. Long Essays : (3 × 20 = 60)

1. Give a comparative account on the available methods (including LP) for the assay of the following :

(a) Streptomycin tablets

(b) Vitamin C

(c) Phenobarbitone

(d) Progesterone. (4 × 5 = 20)

2. (a) Discuss in detail, giving emphasis on principle and significance, the different immunological assay methods.

(b) Explain the role of 2, 4 – dinitrophenyl hydrazine in drug analysis. (14 + 6)

3. (a) Add a note on the validation of analytical method.

(b) Explain validation and calibration of HPLC. (8 + 12)

II. Short notes : (8 × 5 = 40)

1. Add a note on microbiological assay of oxytocin.

2. Explain the principle involved in the determination of aldehydes.

3. Add a note on particle size analysis.

4. Outline the use of Folin-ciocaltean reagent in pharmaceutical analysis.

5. Explain the principle and procedure involved in the assay of Vitamin A concentrate.

6. Discuss the procedure involved in the determination of sodium in sodium chloride injection.

7. How do you calibrate spectrofluorimeter?

8. Explain the procedure involved in X-ray powder diffraction.

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March 2009

[KU 329] **Sub. Code: 2865**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

Branch V – PHARMACEUTICAL ANALYSIS

Paper III – ADVANCED PHARMACEUTICAL ANALYSIS

Q.P. Code : 262865

Time : Three hours **Maximum : 100 marks**

Answer All questions

I. Essay Questions : **(3 x 20 = 60)**

1. a) Write the detailed note on the use of 1,2-Naphthoquinone-4-sulphonate as analytical reagent.
   b) Describe various methods available for the determination of the following functional groups. **a)** Aldehyde **b)** Hydroxyl

2. Explain the official methods involved in the determination of the following dosage forms:
   a) Sulphacetamide **b)** Streptomycin **c)** Riboflavin **d)** Reserpine

3. **a)** Explain the principle and procedure involved in the biological assay of oxytocin.
   b) Write important applications of X-ray powder diffraction technique. Write a note on particle size analysis.

II. Write Short Notes : **(8 x 5 = 40)**

1. Write tests to determine effectiveness of antimicrobial preservatives.
2. What parameters are calibrated for ensuring proper functioning of HPLC?
3. Explain methods to determine the following elements:
   a) Calcium **b)** Iodine.
4. Write applications for Folin cio-calteau reagent in pharmaceutical analysis.
5. Describe typical methods to analyze Vitamin A.
6. Suggest a method for colorimetric determination of Amino acids.
7. Describe the microbiological methods for assay of Cyanocobalamin.
8. How are progesterone derivatives determined in pharmaceutical preparations?

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September 2009

[KV 329] **Sub. Code: 2865**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

Branch V – PHARMACEUTICAL ANALYSIS

Paper III – ADVANCED PHARMACEUTICAL ANALYSIS

Q.P. Code : 262865

Time : Three hours **Maximum : 100 marks**

Answer All questions

I. Essay Questions : **(3 x 20 = 60)**

1. Give a detailed account on different methods established for the determination of the following functional froups.
   a) Ketone **b)** Amine **c)** Aldehyde **d)** Ester

2. Explain the official methods for the determination of the following dosage forms:
   a) Chloramphenicol tablets **b)** Ascorbic acid tablets.
   c) Digitoxin tablets **d)** Digoxin tablets.

3. Explain the principles and procedures for the following reagents in pharmaceutical analysis:
   a) Para dimethyl amino benzaldehyde (PDAB)
   b) Folin – ciocalteau reagent (FC Reagent).

II. Write Short Notes : **(8 x 5 = 40)**

1. Write a note on applications of instrumental methods in the development of medicines.
2. Give a detailed procedure for the validation and calibration of UV – visible spectrophotometer.
3. Give the procedure and principles for the microbiological assay for oxytocin.
4. Give a note on applications of X-ray powder diffraction for the analysis of drugs in their solid state.
5. How the elements of sodium and sulfur are determined?
6. Give the principle and procedure for the microbiological assay of Neomycin sulphate.
7. Explain the usage of N-1 (Naphthyl) ethylene diamine Di HCI in pharmaceutical analysis.
8. What is the test for effectiveness of antimicrobial preservatives?

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March 2010

[KW 329] **Sub. Code: 2865**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

Branch V – PHARMACEUTICAL ANALYSIS

Paper III – ADVANCED PHARMACEUTICAL ANALYSIS

Q.P. Code : 262865

Time : Three hours **Maximum : 100 marks**

Answer All questions

I. Essay Questions : **(3 x 20 = 60)**

1. Give a detailed account on different methods established for the determination of the following functional groups.
   a) Amine **b)** Calcium **c)** Hydroxyl **d)** ester

2. Explain the official methods for the determination of the following dosage forms:
   a) Riboflavin tablets **b)** Reserpine
   c) Phenobarbitone **d)** Streptomycin tablets.

3. Explain the principles and procedures for the following reagents in pharmaceutical analysis:
   a) 2,4 dinitrophenyl hydrazine.
   b) 3-Methyl 2-benzothaiazoline hydrazone (MBTH).

II. Write Short Notes : **(8 x 5 = 40)**

1. Explain the concepts of the analytical method development.
2. Give the method for the validation and calibration of IR spectrophotometer.
3. How the microbiological assay for Oxytocin is carried out.
4. Give the methods of analysis of drugs and excipients in solid state.
5. Give the procedure and principle for test for effectiveness of antimicrobial preservatives.
6. How the elements of calcium and phosphorus are determined?
7. Explain the usage of 2,6-Dichloro quinine chlorimide in pharmaceutical analysis.
8. Write the principle and procedure for the assay of chloramphenicol.

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September 2010

[KX 329] **Sub. Code: 2865**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

(Candidates admitted from 2006-2007 onwards)

FIRST YEAR

Branch V – PHARMACEUTICAL ANALYSIS

Paper III – ADVANCED PHARMACEUTICAL ANALYSIS

Q.P. Code : 262865

Time : Three hours **Maximum : 100 marks**

Answer All questions

I. Essay Questions : **(3 x 20 = 60)**

1. a) Add a note on the validation of analytical method.
   b) Explain validation and calibration of HPLC.

2. a) What is the importance of particles size analysis in pharmacy? Discuss the methods in detail.
   b) What is x-ray powder diffractions? Discuss its applications in pharmacy.

3. Write a detailed study of principle and procedure involved in various physico-chemical methods of analysis for the followings:
   a) Barbiturates b) Steroid.

II. Write Short Notes : **(8 x 5 = 40)**

1. Discuss the estimation of Quinine sulphate and Thiamin.
2. Give the method of determination of a) Sodium b) Chlorine.
3. By selecting suitable drug example write the principle and procedure for colorimetric estimation using following agents:
   a) P-Dimethyl Amino Cinnamaldehyde b) 2,6 Dichloro quinine chlorimide
4. How do you assay Ascorbic acid by different methods? Write any two methods.
5. Describe the typical methods to analyse Vitamin "A".
6. Enlist the different applications of instrumental methods in the development of medicine.
7. Explain the methods to determine the following elements a) Calcium b) Iodine.
8. Explain the official methods for the determination of the following medicine – Tablet Digitoxin.

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MAY 2011

[KY 329] **Sub. Code: 2865**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

(Candidates admitted from 2006-2007 onwards)

FIRST YEAR

BRANCH V – PHARMACEUTICAL ANALYSIS

PAPER III – ADVANCED PHARMACEUTICAL ANALYSIS

Q.P. Code : 262865

Time : Three hours **Maximum : 100 marks**

Answer All questions

I. Essay Questions : **(3 x 20 = 60)**

1. a) Explain the principles and procedures involved in the quantitative determination of amine and hydroxyl groups

   b) Explain about validation and calibration of a UV-visible spectrophotometer.

2. a) Explain about the principles and procedures involved in the analysis of penicillin and digoxin.

   b) Explain the applications of N, 1-naphthyl ethylene diamine in pharmaceutical analysis.

3. a) Explain about the biological assay of diphtheria vaccine.

   b) Write a note on the elemental analysis of calcium and iodine.

II. Write Short Notes : **(8 x 5 = 40)**

1. Explain about the microbiological assay of streptomycin.
2. Write a note on the test for effectiveness of antimicrobial preservatives.
3. Explain the principle and procedure involved in X-ray powder diffraction.
4. Write about the analytical methods for the determination of vitamin A.
5. Explain the applications of 2, 3, 5-Triphenyl Tetrazolium salt in pharmaceutical analysis.
6. Write about the concepts involved in analytical method development.
7. Explain the principle and procedure involved in the assay of chloramphenicol.
8. Explain about validation and calibration of a HPLC instrument.

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